



Hornsea Project Four

Statement of Common Ground between Hornsea Project Four and the Marine Management Organisation

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Glossary

Term	Definition
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Projects (NSIP).
Hornsea Project Four Offshore Wind Farm	The term covers all elements of the project (i.e. both the offshore and onshore). Hornsea Four infrastructure will include offshore generating stations (wind turbines), electrical export cables to landfall, and connection to the electricity transmission network. Hereafter referred to as Hornsea Four.
Orsted Hornsea Project Four Ltd	The Applicant for the proposed Hornsea Project Four Offshore Wind Farm Development Consent Order (DCO).

Acronyms

Acronym	Definition
DMLs	Deemed Marine Licences
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
LSE	Likely Significant Effect
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
PEIR	Preliminary Environmental Information Report
SoCG	Statement of Common Ground

1 Introduction

1.1 Reason for this document

- 1.1.1.1 This Statement of Common Ground (SoCG) has been prepared between Orsted Hornsea Project Four Limited ('the Applicant') and the Marine Management Organisation (MMO) to set out the areas of agreement and disagreement between the two parties in relation to the Development Consent Order (DCO) application for the Hornsea Project Four offshore wind farm (hereafter referred to as 'Hornsea Four').
- 1.1.1.2 This SoCG covers all topics of relevance to the MMO in the marine environment seaward of Mean High Water Springs (MHWS).
- 1.1.1.3 The need for a SoCG between the Applicant and the MMO is set out within the Rule 6 letter issued by the Planning Inspectorate (PINS) on 24 January 2022.
- 1.1.1.4 Following detailed discussions undertaken through the Evidence Plan Process, the Applicant and the MMO have sought to progress a SoCG. It is the intention that this document will provide PINS with a clear overview of the level of common ground between both parties. This document will facilitate further discussions between the Applicant and the MMO and the SoCG will be updated as discussions progress during the Hornsea Four examination process.

1.2 Approach to SoCG

- 1.2.1.1 The Applicant took the decision at an early stage to adopt a proportionate approach to Environmental Impact Assessment (EIA) for Hornsea Four which is detailed and integrated throughout the DCO application. The Impacts Register (see [Volume A4, Annex 5.1: Impacts Register](#)) is a key tool that details all potential impacts identified for Hornsea Four and sets the scope of the EIA at various stages of the project (Scoping, PEIR and DCO). In line with the Applicant's approach to proportionality, only Likely Significant Effects (LSE) were included within the individual topic assessments within the relevant chapters of the Environmental Statement (ES). This SoCG seeks to set out the agreements reached with the MMO on the proportionate approach to EIA in addition to other matters such as (but not limited to) the adequacy of baseline data collection, the assessment methodology and conclusions reached.
- 1.2.1.2 The structure of this SoCG is as follows:
- [Section 1](#): Introduction;
 - [Section 2](#): Consultation;
 - [Section 3](#): Agreement Logs; and
 - [Section 4](#): Summary.

1.3 Application elements under The Marine Management Organisations remit

- 1.3.1.1 The elements of Hornsea Four which may affect the interests of the MMO are Work Numbers 1 to 5, covering the intertidal (seaward of MHWS) and offshore works. These are detailed in

Part 1 (Authorised Development) of Schedule 1 (Authorised Project) of the draft DCO ([C1.1: Draft DCO including Draft DML](#)).

1.3.1.2 This SoCG covers technical topics of the DCO application of relevance to the MMO comprising:

- Draft DCO and Deemed Marine Licences (non-EIA topic-specific);
- Marine Geology, Oceanography and Physical Processes;
- Benthic & Intertidal Ecology;
- Fish and Shellfish Ecology;
- Marine Mammals/Underwater Noise; and
- Outline Plan Documents.

1.3.1.3 It is agreed that, whilst the MMO retains an interest in the following areas with respect to the provisions set out in the DCO and DMLs, the MMO defers to other parties for the following topics and has made little or no comment in relation to the technical assessments associated with them. Agreement logs have not been presented for these topics:

- Shipping and Navigation;
- Commercial Fisheries;
- Seascape, Landscape and Visual;
- Aviation, Military and Communications;
- Marine Archaeology;
- Offshore and Intertidal Ornithology;
- Without Prejudice Derogation Case and
- Infrastructure and Other Users.

1.4 Overview of Hornsea Four

1.4.1.1 Hornsea Four is an offshore wind farm which will be located approximately 65 km offshore the East Riding of Yorkshire in the Southern North Sea and will be the fourth project to be developed in the former Hornsea Zone. Hornsea Four will include both offshore and onshore infrastructure and consists of:

- **Hornsea Four array area:** This is where the offshore wind generating station will be located which will include the turbines, array cables, offshore accommodation platforms and a range of offshore substations as well as offshore interconnector cables and export cables;
- **Hornsea Four offshore export cable corridor:** This is where the permanent offshore electrical infrastructure (offshore export cables, as well as the High Voltage Alternating Current (HVAC) booster station (if required), will be located;
- **Hornsea Four intertidal area:** This is the area between MHWS and Mean Low Water Springs (MLWS) through which all of the offshore export cables will be installed;
- **Hornsea Four onshore export cable corridor:** This is where the permanent onshore electrical cable infrastructure will be located; and
- **Hornsea Four onshore substation including energy balancing infrastructure:** This is where the permanent onshore electrical substation infrastructure (onshore High Voltage Direct Current (HVDC) converter/HVAC substation, energy balancing infrastructure and connections to the National Grid) will be located.

2 Consultation

2.1 Summary of consultation with the Marine Management Organisation

2.1.1.1 **Table 1** below summarises the consultation that the Applicant has undertaken with the MMO during the pre-application phase for each relevant component of the application (as identified in **paragraph 1.3.1.1**) seaward of MHWS.

Table 1: Summary of pre-application consultation with the MMO.

Date	Form of consultation	Statutory/Non Statutory	Summary
07/08/2018	Meeting	Non Statutory	Evidence Plan Steering Group Meeting 1 Introduction to the proposed project and project teams and summary, reflections, agreement and sign off on the Terms of Reference.
12/09/2018	Meeting	Non Statutory	Marine Processes & Ecology Evidence Plan Technical Panel Meeting 1 Meeting to introduce Hornsea Four, the consenting programme, evidence plan process and the proportionate approach to EIA. An overview of work undertaken to date was provided, including scoping and approach to baseline.
13/09/2018	Meeting	Non Statutory	Marine Mammals Evidence Plan Technical Panel Meeting 1 Introduction to the project. Introduction to the TP, the EP process and the proportionate approach to EIA; and Discussion on key position papers.
03/10/2018	Meeting	Non Statutory	Marine Mammals Evidence Plan Technical Panel Meeting 2 Introduction to the project. Introduction to the TP, the EP process and the proportionate approach to EIA; and Discussion on key position papers.
15/10/2018	Consultation	Statutory	Hornsea Four Scoping Report
26/11/2018	Consultation	Statutory	Scoping Opinion Consultation response on the Scoping Report from the MMO.
12/12/2018	Meeting	Non Statutory	Evidence Plan Steering Group Meeting 2 Update on the project development activities. Review of the Scoping Opinion responses and discussion on the next steps in relation to seeking agreement with key stakeholders on the data to be included in the PEIR and ES.
12/12/2018	Meeting	Non Statutory	Marine Processes & Ecology Evidence Plan Technical Panel Meeting 2 Meeting to provide Hornsea Four update, recap of the EIA scoping report and approach to EIA proportionality. Scoping opinions received were discussed, and necessary next steps, including survey and assessment work.
14/01/2019	Meeting	Non Statutory	Marine Mammals Evidence Plan Technical Panel Meeting 3 Project updates, review of responses received during the Scoping process. Discuss the next steps in relation to seeking agreement with stakeholders on the data and information to be included in the PEIR and ES.

Date	Form of consultation	Statutory/Non Statutory	Summary
06/03/2019	Consultation	Non Statutory	Responses to Benthic and Intertidal Technical Note.
30/04/2019	Meeting	Non Statutory	<p>Marine Processes & Ecology Evidence Plan Technical Panel Meeting 3</p> <p>Meeting to provide Hornsea Four update since receipt of Scoping Opinion. Review of responses to both the Scoping Report and the HRA Screening Report, and the approach to the RIAA. Discussion on the next steps to seeking agreement in relation to data to be included in the PEIR and ES. Discussion on Biodiversity Net Gain.</p>
30/04/2019	Meeting	Non Statutory	<p>Marine Mammals Evidence Plan Technical Panel Meeting 4</p> <p>Meeting to provide a Hornsea Four update and updates on ongoing baseline surveys. Section 42 comments received were discussed (including the provision of necessary further information or evidence, and /or the Applicant's proposed response). Consensus was sought on the proposed approach to ES (impacts to be covered in detail in the ES chapter) and what additional evidence or information is required. Comments on the Noise modelling methodology and RIAA.</p>
25/06/2019	Meeting	Non Statutory	<p>Evidence Plan Steering Group Meeting 3</p> <p>Update on project information, local information events, onshore and offshore Technical Panels and non-Evidence Plan consultation.</p>
26/06/2019	Meeting	Non Statutory	<p>Marine Mammals Evidence Plan Technical Panel Meeting 5</p> <p>Project updates and discussion around the scope of the PEIR and ES. Review of the impacts register and discussion on next steps to seeking agreement with stakeholders on the data and information to be included in the PEIR and ES.</p>
13/08/2019	Consultation	Statutory	<p>Hornsea Four PEIR</p> <p>Published for statutory Section 42 consultation.</p>
23/09/2019	Consultation response	Statutory	<p>MMO letter response to PEIR</p> <p>Providing comments on the PEIR.</p>
06/11/2019	Meeting	Non Statutory	<p>Evidence Plan Steering Group Meeting 4</p> <p>Update on project information and overview of the programme to DCO application. Update to Terms of Reference to reflect Historic England joining Steering Group. Updates to the Impacts Register and Commitments Register. Discussion on the Draft DCO and DMLs.</p>
06/11/2019	Meeting	Non Statutory	<p>Marine Mammals Technical Panel Meeting 6</p> <p>Data collection and description of the baseline environment and the inclusion of bottlenose dolphin in the baseline; impact assessment methodology in response to Section 42 comments regarding simultaneous piling, ramp-up hammer energy scenarios and Unexploded Ordnance (UXO); and the RIAA.</p>
13/11/2019	Meeting	Non Statutory	<p>Marine Processes & Ecology Evidence Plan Technical Panel Meeting 4</p> <p>Meeting to provide a Hornsea Four update and updates on ongoing baseline surveys. Section 42 comments received were</p>

Date	Form of consultation	Statutory/Non Statutory	Summary
			discussed (including the provision of necessary further information or evidence, and /or the Applicant's proposed response). Consensus was sought on the proposed approach to ES (impacts to be covered in detail in the ES chapter) and what additional evidence or information is required. New commitments in relation to the Dogger Bank Creyke Beck cable crossing and Smithic Bank.
17/12/2019	Meeting	Non Statutory	Marine Mammals Technical Panel Meeting 7 Project and programme updates; and updates to the Impacts Register.
16/03/2020	Meeting	Non Statutory	Evidence Plan Steering Group Meeting 5 Review of draft ES documents by the relevant Technical Panels. Overview of planned seabed investigations. Project updates and updates to the Impacts Register, Commitments Register, Draft DCO and DMLs.
06/06/2020	Meeting	Non Statutory	Marine Mammals Technical Panel Meeting 8 Discussion on the draft ES documents provided for review prior to the meeting; Presentation of updated HRA screening for marine mammals; Discussion on the approach to the UXO assessment; and Presentation of grey seal information that will form part of the RIAA.
10/05/2021	Meeting	Non Statutory	Marine Mammals Technical Panel Meeting 9 Project updates including the reduction in the developable area and the change to the project programme; Discussion on the bottlenose dolphin Management Unit and assessment; presentation of approach to the cumulative assessment in relation to seismic surveys, disturbance impacts, simultaneous piling and a new form of result presentation; and updates required to the modelling as a result of the change to Order Limits.
21/10/2020	Meeting	Non Statutory	Evidence Plan Steering Group Meeting 6 Review of draft ES documents by the relevant Technical Panels. Project updates on change to Hornsea Four Order Limits. DCO application submission programme, SoCGs and Project Seabird and Derogation. Overview of Design Vision Statement and planned seabed investigations.
11/05/2021	Meeting	Non Statutory	Marine Ecology and Processes Technical Panel Meeting 5C – Fish and Shellfish Ecology Project updates including the reduction in the developable area. Discussion on key issues raised in the consultee comments (spawning timings for Banks herring and the conclusions of assessments); and updates required to the draft ES documents as a result of the change to Order Limits.
13/05/2021	Meeting	Non Statutory	Marine Ecology and Processes Technical Panel Meeting 5A – Marine Processes

Date	Form of consultation	Statutory/Non Statutory	Summary
			Project updates including the reduction in the developable area and the change to the project programme. Review of consultee comments on the draft ES Chapter and Technical Report and the key issues identified; and updates required to the modelling as a result of the change to Order Limits.
13/05/2021	Meeting	Non Statutory	<p>Marine Ecology and Processes Technical Panel Meeting 5B – Benthic and Intertidal Ecology</p> <p>Project updates including the reduction in the developable area and the change to the project programme. General agreements from consultee comments on the draft ES Chapter and Technical Report. Discussion on key issues raised in the consultee comments; and updates required to the draft ES documents as a result of the change to Order Limits.</p>
29/07/2021	Meeting	Non Statutory	<p>Evidence Plan Steering Group Meeting 7</p> <p>Project updates on change to DCO application submission programme, SoCGs and non-statutory compensation consultation. Overview of geophysical and geotechnical investigations.</p>

3 Agreement Log

3.1 Overview

3.1.1.1 The following sections set out the level of agreement between the Applicant and the MMO, for each relevant component of the application (as identified in [paragraph 1.3.1.1](#)) seaward of MHWS.

3.1.1.2 In order to easily identify whether a matter is 'agreed', 'not agreed' or an 'ongoing point of discussion', the colour coding system set out in [Table 2](#) below is used within the 'position' column of the following sections of this document.

Table 2: Position Status Key.

Position Status	Position Colour Coding
Agreed The matter is considered to be agreed between the parties.	Agreed
Not Agreed – no material impact The matter is not agreed between the parties, however the outcome of the approach taken by either the Applicant or the MMO is not considered to result in a material impact to the assessment conclusions.	Not Agreed – no material impact
Not Agreed – material impact The matter is not agreed between the parties and the outcome of the approach taken by either the Applicant or the MMO is considered to result in a materially different impact to the assessment conclusions.	Not Agreed – material impact
Ongoing point of discussion The matter is neither 'agreed' nor 'not agreed' and is a matter where further discussion is required between the parties (e.g. where documents are yet to be shared with the MMO).	Ongoing point of discussion

3.2 Draft DCO and Deemed Marine Licences (non-EIA topic specific)

Table 3: Agreement Log: Draft DCO and Deemed Marine Licences.

ID	Hornsea Four Position	MMO Position	Position Summary
MMO-DCO-01	<p>The wording of the following Article is appropriate and adequate:</p> <ul style="list-style-type: none"> Benefit of the Order (DCO: Article 5, Part 2, Principal Powers). 	<p>Deadline 2: Submission Written Representation (REP2-077): 2.4.1 The MMO has concerns regarding the transfer of the DMLs based on the current drafting and requests that all references to the MMO and DMLs should be removed from Article 5 of the DCO.</p> <p>2.4.2 This is because the intention under the Planning Act Section 149A is only to amend the method by which a marine licence is obtained, it does not, of itself, make a DML part and parcel of the Order. As currently drafted, the DMLs become part of the DCO by having Article 5 apply to the DMLs, allowing the transfer of the whole or part of the benefit of the provisions of the DMLs.</p> <p>2.4.3 The MMO does not consider that there is a need to have the Order make provision for transferring of the DMLs in Article 5 as there is already a mechanism for transferring the DMLs under the Marine and Coastal Access Act 2009 (MCAA). In the MMO's view Article 5 should be reserved to the transfer of the Order and should not refer to the DMLs. The DMLs should be considered separately and dealt with under MCAA, as would happen for any other marine licence.</p> <p>Deadline 5 (REP5-107): The MMO maintains our position from Deadline 2 on this matter. No changes have been put forward in the latest DCO revision REP4-050. The MMO also requests that in Schedule 11 and 12, Part 1, Article 7 is removed, in line with the position to remove all reference to the MMO and the DMLs from DCO Article 5.</p> <p>Deadline 6: The MMO maintains our position from both Deadline 2 (REP2-077) and 5 (REP5-107). The disagreement is understood to be final.</p> <p>Deadline 7: No change in position.</p> <p>Deadline 8: No change in position.</p>	Not Agreed – no material impact
MMO-DCO-02	<p>The wording of the following Condition is appropriate and adequate:</p> <ul style="list-style-type: none"> Part 2, Condition 14 of DCO Schedules 11 and 12 regarding the timescales associated with the submission of documentation. 	<p>Deadline 5 (REP5-107): The MMO notes that in REP4-050 timescales for the submission of documentation now stipulate a four month submission timescale for all plans bar the following for Schedule 11:</p> <ul style="list-style-type: none"> (a) marine written scheme of archaeological investigation pursuant to condition 13(2); (b) fisheries coexistence and liaison plan pursuant to condition 13(6); (c) design plan pursuant to condition 13(1)(a); and (d) cable specification and installation plan pursuant to condition 13(1)(h) <p>And the following of Schedule 12:</p>	Not Agreed – no material impact

ID	Hornsea Four Position	MMO Position	Position Summary
		<p>a) marine written scheme of archaeological investigation pursuant to condition 13(2); (b) fisheries coexistence and liaison plan pursuant to condition 13(6); (c) design plan pursuant to condition 13(1)(a); (d) cable specification and installation plan pursuant to condition 13(1)(h); and (e) HVAC booster station lighting plan. Which stipulate a six month review. The MMO advises that the "outline operations and maintenance plan" in Part 2, Article 4 of both DMLs should have a six month timescale. The MMO advises that the "outline southern north sea special area of conservation site integrity plan" should have its own condition (see MMO-OP-02 of this SOCG), and have a six month timescale. The MMO advises the "outline marine mammal mitigation protocol" should have a six month timescale. The MMO has major concerns with the inclusion of Article 14 (3) "(3) The MMO must determine an application for consent made under Condition 13 within a period of four months commencing on the date the application is received by the MMO, unless otherwise agreed in writing with the undertaker such agreement not to be unreasonably withheld or delayed" and requests that this is removed. The MMO strongly considers it inappropriate to put timeframes on decisions of such a nature. Under such tight restrictions if the evidence obtained does not provide the MMO with confidence that risks have been dealt with robustly, the determination may result in a refusal of the application for discharge. The undertaker would then have to restart the process and provide updated documentation in this instance. The MMO acknowledges that the Applicant may wish to create certainty around when to expect a determine on applications for approvals required under the conditions of a licence, and whilst the MMO acknowledges that delays can be problematic for developers, the MMO advises that it does not delay determining whether to grant or refuse such approvals unnecessarily, we make determinations in as timely a manner as is possible. This position is unchanged from (AP-031). Deadline 6: The MMO maintains its position from Deadline 5 (REP5-107) regarding timescales and determination dates. The MMO notes that a decision on the application for a Development Consent Order for The Sizewell C Project was taken on 20 July 2022 and that this decision favoured the MMO's position on the removal of determination dates from the conditions of the DML's. Deadline 7: No change in position. Deadline 8: No change in position.</p>	
MMO-DCO-03	The wording of the following Articles is appropriate and adequate:	Deadline 5 (REP5-107): The MMO position on the inclusion of wording "immaterial changes" or "materially new or materially greater environmental effects" remains as outlined in AP-031.	Not Agreed – no material impact

ID	Hornsea Four Position	MMO Position	Position Summary
	<ul style="list-style-type: none"> Amendments to approved details (DCO: Article 30, Part 3); and Part 1, Article 9 of DCO Schedules 11 and 12 regarding the materiality of amendments to or variations from the approved details. 	<p>Whilst the MMO appreciates the clarity provided for the requirement of the Applicant to satisfy the MMO of any changes, the MMO's concerns remain for the use of "immaterial changes" used within this Article. The Applicants comments "<i>The Environmental Statement captures the results of the EIA, meaning that this paragraph limits the activities permitted by the DCO and DMLs to those assessed by the EIA. Any change to approved details which leads to a change in the likely significant effects assessed in the Environmental Statement would be considered material and would no longer be authorised by the DMLs.</i>" (within "Responses to RR" at Deadline 1) provides some comfort, however, the use of the wording "immaterial changes" continues to leave this unclear within the DCO and DMLs. The MMO suggested that the Applicant could add the later comments within a definition for "immaterial changes" within Article 1 of the DMLs and this could help resolve this matter, however these changes have not been made.</p> <p>Deadline 6: MMO maintains the position from Deadline 5 (REP5-107), that a definition for "immaterial changes" would give clarity on the Applicant's position and would provide the security we request.</p> <p>Deadline 7: No change in position.</p> <p>Deadline 8: No change in position.</p>	
MMO-DCO-04	<p>The interpretations of all terms within the following sections of the DCO and DMLs are appropriate and adequate:</p> <ul style="list-style-type: none"> Article 2, Part 1 of C1.1: Draft DCO including Draft DML; Condition 1, Part 1 of Schedule 11 of C1.1: Draft DCO including Draft DML; and Condition 1, Part 1 of Schedule 12 of C1.1: Draft DCO including Draft DML. <p>Updates were made to the interpretations following MMO comments and the most up to date changes are shown in C1.1.1 Draft</p>	<p>Deadline 5 (REP5-107): The MMO has reviewed the latest DCO and DML in REP4-050 and appreciates the changes made in light of our suggestions. Please see the MMO's Deadline 5 for our latest comments on the DCO and DMLs.</p> <p>Deadline 6: The MMO has reviewed the latest DCO and DML in REP5a-002.</p> <p>We note the Applicant has not made changes in line with the MMO requests (detailed within REP5-107) to the following Articles:</p> <ul style="list-style-type: none"> DCO Part 1, Article 2, "box-type gravity base structures"; "gravity base structure"; "jacket foundation"; "monopile foundation"; "mono suction bucket foundation"; "pontoon gravity base type 1 structure"; and "pontoon gravity base type 2 structure". DCO Part 1, Article 2, "horizontal directional drilling". <p>However, the MMO notes these were minor comments and as such consider these matters resolved.</p> <p>We note the Applicant has not made changes in line with the MMO requests (detailed within REP5-107) to the following Articles, but outline they can be closed due to the following reasons:</p> <ul style="list-style-type: none"> DCO Part 1, Article 2: "maintain". The MMO maintains that further information should be included within this interpretation, however, ultimately leave it to the Examining Authority as to whether changes necessary. As such we consider this matter closed. 	Agreed at Deadline 6

ID	Hornsea Four Position	MMO Position	Position Summary
	DCO and DML Schedule of Change submitted at Deadline 3.	<ul style="list-style-type: none"> DML Schedule 11, Part 1, Article 1. The MMO notes the typographical error in footnote "c", there should be no spaces between "c." and "23". This should be corrected, but is a minor point, as it is a matter of formatting, once done, this matter is resolved. 	
MMO-DCO-05	<p>The wording of the following Article is appropriate and adequate:</p> <ul style="list-style-type: none"> Certification of plans and documents, etc. (DCO: Article 38, Part 7, Miscellaneous and General). <p>In addition, Schedule 15 includes a thorough list of both ES and non ES documents to be certified.</p>	<p>Relevant Representation (RR-020): 2.3.3 It is the MMO's position that the ES should be updated at the end of Examination. This is because throughout the Examination process further information can be requested and provided by the Applicant that directly links to the conclusions of the ES, including addendums to chapters etc. The MMO understands that this can be a large undertaking but believes it is paramount so that these updates can be easily identified as part of the Environmental Statement and as a Certified document.</p> <p>The MMO welcomes Article 38 to reference Schedule 15 for the Certified documents and plans as this would help with clarity at the post consent stage. The MMO will review the updated Schedule 15 once this has been updated further.</p> <p>Deadline 5: The MMO notes the Applicant's comments under RR-020-2.3.3 in submission REP1-038 "<i>The Applicant notes the comments of the MMO and proposes that should any updates be needed to the Environmental Statement, it will submit a schedule of changes along with an updated impacts register by the close of examination.</i>" The MMO is therefore satisfied.</p> <p>Deadline 6: The MMO is not aware of any implications that would change its position from Deadline 5, the matter remains agreed.</p>	Agreed at Deadline 3
MMO-DCO-06	<p>The wording of the following Article is appropriate and adequate:</p> <ul style="list-style-type: none"> Arbitration (DCO: Article 39, Part 7, Miscellaneous and General). 	<p>Relevant Representation (RR-020): 2.3.4 The MMO believes that this condition should be updated to include the following wording at the start: "<i>Subject to article 42 (saving provisions for Trinity House) any difference...</i>"</p> <p>Deadline 6: The MMO remain satisfied with the wording of this condition, this matter is considered agreed.</p>	Agreed at Deadline 3
MMO-DCO-07	<p>The wording of the following Schedule is appropriate and adequate:</p> <ul style="list-style-type: none"> Authorised Project (DCO: Schedule 1) 	<p>Deadline 5 (REP5-107): The MMO has reviewed the latest DCO and DML in REP4-050 and appreciates the changes made in light of our suggestions. Please see the MMO's Deadline 5 (REP5-107) for our latest comments on the DCO and DMLs.</p> <p>Deadline 6: Under section 2.5.3 of (REP5-107), the MMO requested that "unless otherwise agreed with the MMO" included "in writing" at the end. The MMO understands from the Applicant that they consider this amendment is not required due to the provisions within Article 29 of Part 3 of that Schedule (1), which requires all approvals, agreements or confirmations under that part to be provided in writing. Whilst the MMO maintains that the addition would add clarity, we are content that this matter can be considered closed.</p>	Agreed at Deadline 6

ID	Hornsea Four Position	MMO Position	Position Summary
MMO-DCO-08	<p>The wording of the following Schedule is appropriate and adequate:</p> <ul style="list-style-type: none"> Deemed Marine Licence Under The 2009 Act – Generation Assets (DCO: Schedule 11) 	<p>Deadline 5: The MMO has reviewed the latest DCO and DML in REP4-050 and appreciates the changes made in light of our suggestions. Please see the MMO’s Deadline 5 for our latest comments on the DCO and DMLs.</p> <p>Deadline 6: The MMO has reviewed the latest DCO and DML in REP5a-002 and has provided updated comments within our Deadline 6 submission.</p> <p>Deadline 7: No change in position.</p> <p>Deadline 8: No change in position.</p>	Not agreed – no material impact
MMO-DCO-09	<p>The wording of the following Schedule is appropriate and adequate:</p> <ul style="list-style-type: none"> Deemed Marine Licence Under The 2009 Act – Transmission Assets (DCO: Schedule 12) 	<p>Deadline 5: The MMO has reviewed the latest DCO and DML in REP4-050 and appreciates the changes made in light of our suggestions. Please see the MMO’s Deadline 5 for our latest comments on the DCO and DMLs.</p> <p>Deadline 6: The MMO has reviewed the latest DCO and DML in REP5a-002 and has provided its updated comments within our Deadline 6 submission.</p> <p>Deadline 7: No change in position.</p> <p>Deadline 8: No change in position.</p>	Not agreed – no material impact

3.4 Marine Geology, Oceanography and Physical Processes

Table 4: Agreement Log: Marine Geology, Oceanography and Physical Processes.

ID	Hornsea Four Position	MMO Position	Position Summary
Environmental Impact Assessment			
MMO-MP-01	Existing and project-specific survey baseline data is sufficient to inform the assessment.	<p>Relevant Representation (RR-020): 3.2.3 The MMO believes that further information should be provided to provide enough evidence on the baseline. Whilst this gives a good overall evidence base, there are a number of areas where the evidence base is either patchy or non-existent. These include the cable route around Smithic bank and the coastline. The MMO would expect to see additional Swath Bathymetry and geotechnical surveys from just offshore of the cable crossing with Dogger Bank A+B area and the Holderness coastline.</p> <p>Deadline 5: The MMO has reviewed the Marine Processes Supplementary Report [REP4-043] and consulted with scientific advisors at the Centre for Environment, Fisheries, and aquaculture Science (CEFAS) and provided its comments at Deadline 5. Please see MMO's Deadline 5 submission for its latest position on this matter. We conclude that there are remaining issues on this point.</p> <p>Deadline 6: The MMO has reviewed G5.33 Clarification Note on Marine Processes Mitigation and Monitoring and EN010098-001642-'s Marine Processes Report Review and consulted with scientific advisors at Cefas and provided its comments at Deadline 6. Please see MMO's Deadline 6 submission for its latest position on this matter. We conclude that there are remaining issues on this point.</p> <p>Deadline 7: No change in position.</p> <p>Deadline 8: No change in position.</p>	Not Agreed – material impact
MMO-MP-02	The impact assessment methodologies used for the EIA provide an appropriate approach to assessing potential impacts of Hornsea Four.	<p>Relevant Representation (RR-020): 3.2.9 Adverse effects, in terms of coastal processes, are identified and then linked via a pathway to a sensitive receptor (the SPR (Source-Pathway-Receptor) methodology). Therefore, whilst there maybe adverse impacts locally around (say) a structure, if no receptor is nearby, no adverse impact is assumed and thus is discounted. In this project many of the impactors are offshore are thus discounted. However, the MMO still has major concerns about the cumulative impact of cables crossing Smithic Bank.</p> <p>Deadline 5: The MMO has reviewed the Marine Processes Supplementary Report [REP4-043] and consulted with scientific advisors at the Centre for Environment, Fisheries, and aquaculture Science (CEFAS) and provided its comments at Deadline 5. Please see MMO's Deadline 5 submission for its latest position on this matter. We conclude that there are remaining issues on this point.</p>	Not agreed – no material impact

ID	Hornsea Four Position	MMO Position	Position Summary
		<p>Deadline 6: The MMO has reviewed G5.33 Clarification Note on Marine Processes Mitigation and Monitoring and EN010098-001642-s Marine Processes Report Review and consulted with scientific advisors at Cefas and provided its comments at Deadline 6. Please see MMO's Deadline 6 submission for its latest position on this matter. We conclude that there are remaining issues on this point.</p> <p>Deadline 7: The MMO has no material concern with the EIA impact assessment methodology for Marine Geology, Oceanography and Physical Processes.</p> <p>Deadline 8: No change in position.</p>	
MMO-MP-03	The maximum design scenario (MDS) presented in the assessment is appropriate.	<p>Relevant Representation (RR-020): 3.2.4 The Maximum Design Scenario ("MDS") has correctly used the use of GBS as its worst realistic scenario as this involves large structures (conical concrete structures) and significant amounts of seabed preparation. In the offshore GBS/Monopile/jacket zone the MMO agrees with the conclusion except for those associated with the potential changes to Flamborough Front.</p> <p>Deadline 6: The MMO has reviewed G5.33 Clarification Note on Marine Processes Mitigation and Monitoring and EN010098-001642-'s Marine Processes Report Review and consulted with scientific advisors at Cefas and provided its comments at Deadline 6. Please see MMO's Deadline 6 submission for its latest position on this matter. We conclude that there are remaining issues on this point.</p> <p>Deadline 7: The MMO confirm the position outlined in RR-020 regarding MDS and consider this comment closed.</p>	Agreed at Deadline 3
MMO-MP-04	The conclusions of the assessment of alone impacts for construction, operation and decommissioning are agreed.	<p>Relevant Representation (RR-020): 3.2.8 Except for the Smithic Holderness export cable area with Dogger Bank A+B export cables there is not an adequate description of the potential cumulative and inter-related impacts and effects on the physical and biological environment.</p> <p>Deadline 5: The MMO has reviewed the Marine Processes Supplementary Report [REP4-043] and consulted with scientific advisors at the Centre for Environment, Fisheries, and aquaculture Science (CEFAS) and provided its comments at Deadline 5. Please see MMO's Deadline 5 submission for its latest position on this matter.</p> <p>Deadline 6: The MMO has reviewed G5.33 Clarification Note on Marine Processes Mitigation and Monitoring and EN010098-001642-'s Marine Processes Report Review [MMO to complete latest position] and consulted with scientific advisors at Cefas and provided its comments at Deadline 6. Please see MMO's Deadline 6 submission for its latest position on this matter. We conclude that there are remaining issues on this point.</p> <p>Deadline 7: No change in position.</p> <p>Deadline 8: No change in position.</p>	Not Agreed – material impact

ID	Hornsea Four Position	MMO Position	Position Summary
MMO-MP-05	The conclusions of the assessment of cumulative impacts are agreed.	<p>Relevant Representation (RR-020): 3.2.8 Except for the Smithic Holderness export cable area with Dogger Bank A+B export cables there is not an adequate description of the potential cumulative and inter-related impacts and effects on the physical and biological environment.</p> <p>Deadline 5: The MMO has reviewed the Marine Processes Supplementary Report [REP4-043] and consulted with scientific advisors at the Centre for Environment, Fisheries, and aquaculture Science (CEFAS) and provided its comments at Deadline 5. Please see MMO's Deadline 5 submission for its latest position on this matter. We conclude that there are remaining issues on this point.</p> <p>Deadline 6: The MMO has reviewed G5.33 Clarification Note on Marine Processes Mitigation and Monitoring and EN010098-001642-'s Marine Processes Report Review [MMO to complete latest position] and consulted with scientific advisors at Cefas and provided its comments at Deadline 6. Please see MMO's Deadline 6 submission for its latest position on this matter. We conclude that there are remaining issues on this point.</p> <p>Deadline 7: No change in position.</p> <p>Deadline 8: No change in position.</p>	Not Agreed – material impact
MMO-MP-06	Given the impacts of the project, the proposed Commitments outlined in Volume A4, Annex 5.2: Commitments Register are appropriate.	<p>Deadline 5: The MMO has reviewed the Marine Processes Supplementary Report [REP4-043] and consulted with scientific advisors at the Centre for Environment, Fisheries, and aquaculture Science (CEFAS) and provided its comments at Deadline 5. The MMO advises that there may be the requirement for the inclusion of an "outline marine processes management plan", or an update to the "the outline marine monitoring plan" to capture this monitoring, depending on the resolution of the ongoing discussions on the matter.</p> <p>Deadline 6: The MMO has reviewed G5.33 Clarification Note on Marine Processes Mitigation and Monitoring and EN010098-001642-'s Marine Processes Report Review and consulted with scientific advisors at Cefas and provided its comments at Deadline 6. Please see MMO's Deadline 6 submission for its latest position on this matter. We conclude that there are remaining issues on this point. Please note MMO comments provided at Deadline 6 regarding the monitoring proposals, which are as follows:</p> <ul style="list-style-type: none"> Smithic Bank monitoring: The MMO advise a high-resolution pre-construction survey is undertaken followed by a post-cable installation survey every 6 months for 2 years (including two winters periods and one summer) and further surveys every 5-years for the duration of the project. Comparison reports should be produced, incorporating a comparison with existing bathymetric survey data. 	Not agreed – no material impact

ID	Hornsea Four Position	MMO Position	Position Summary
		<ul style="list-style-type: none"> Rock protection Smithic Bank: The MMO consider that tighter control measures should be implemented to ensure that the least amount of rock protection is deployed within Smithic Bank, in line with the proposed maximum 5% of cables getting rock protection in the Smithic Bank area. We believe the Applicant should be conditioned to submit the detailed pre-construction surveys and the cable burial risk assessment for the Smithic Bank area showing the % of cables that will be buried, and what the method of construction will be. This would then be reviewed and approved by the MMO. Flamborough Front: The MMO confirms that we believe the Applicant is making progression regarding satellite monitoring, we confirm that the level of detail, and resolution of the satellite monitoring proposed is good. However, the MMO believes that this monitoring needs to expand to an array scale in the first instance, and not wait to see if monitoring of 3 distinct locations triggers the need for a wider scale monitoring. We believe this monitoring should look at productivity, by looking at Chlorophyll, and sediment plumes which will help illustrate and monitor turbine wake interactions. Regarding the timing of monitoring the MMO believe we would need to see the stratification and as such, covering periods of spring, summer and autumn. The MMO proposes a first set of monitoring is undertaken to then help with the identification and the wider design of the monitoring to be suitably tailored. <p>Deadline 7: The MMO is reviewing the Applicant’s updated F2.7: Outline Marine Monitoring Plan due to be submitted at Deadline 7 and will provide a final decision on whether this satisfies the MMO’s outstanding concerns with a signed statement of common ground at Deadline 8.</p> <p>Deadline 8: The MMO has reviewed the Applicant’s updated F2.7: Outline Marine Monitoring Plan submitted at Deadline 7 and are content with its contents regarding this matter, we provide some remaining minor comments in the Deadline 8 submission:</p> <ul style="list-style-type: none"> The MMO welcomes the addition of Table 3 referring to Smithic Bank and Flamborough Front. However, a 10% buffer either side of the cable is proposed (10% of the corridor width). The MMO requests that this is defined, and query whether this is sufficient to identify sources of sediment disturbance that could impact the integrity of the cable on the active Smithic bank region. In terms of the coverage of swath bathymetry surveys of Smithic Bank, a chart showing the planned route, the cable corridor and the 10% margin along with a background of the latest bathymetry from winter 2020/21 would enable reviewers to assess if the 10% margin is sufficient to detect sources of disturbance. 	

ID	Hornsea Four Position	MMO Position	Position Summary
Draft DCO and Deemed Marine Licences			
MMO-MP-07	<p>The wording of the following requirements and conditions pertaining to marine geology, oceanography and physical processes are appropriate and adequate:</p> <ul style="list-style-type: none"> • Part 2 - Condition 13(1)(c) of DCO Schedules 11 and 12 with reference to a Construction Method Statement; • Part 2 - Condition 13(1)(e) of DCO Schedules 11 and 12, Part 2 - Condition 13(1)(e) with reference to the development of a Scour Protection Management Plan; • Part 2 - Condition 13(1)(h) of DCO Schedules 11 and 12 with reference to a Cable Specification and Installation Plan; • Part 1(6) of DCO Schedules 11 and 12 with reference to a decommissioning plan; • Paragraph 2(a) of Part 1 of DCO Schedules 11 and 12 with reference to the maximum volumes of material to be disposed seaward of Mean High Water Springs (MHWS) within the Hornsea Four Order Limits. 	<p>Deadline 5: The MMO has reviewed the latest DCO and DML in REP4-050, including the wording of these requirements. Please see the MMO's Deadline 5 for our latest comments on the DCO and DMLs.</p> <p>Deadline 6:</p> <p>Regarding DMLs Schedule 11 and 12, Part 2, Article 13(1)(h)(ii), the MMO notes the Applicant's comments that they consider the term 'Chart Datum' to be a widely used and an understood term. Whilst the MMO considers that adding a definition would add clarity (REP5-107), it is content this is a minor point and can be considered closed.</p> <p>Regarding DMLs Schedule 11 and 12, Part 1, Article 2 (a), the MMO maintains the position that this condition should be updated to include reference to the disposal sites and also to separate the volumes per disposal activity, and that boulder clearance needs to be included within the description. This would provide the most appropriate clarity. The MMO reiterates its suggestion the wording outlined within 4.4.10 of REP5-107.</p> <p>The MMO further clarifies that regarding our comments within 4.4.11 (REP5-107), regarding DMLs Schedule 11 and 12, Part 1, Article 2 the figure suggested by the MMO of 399,776 cubic metres is incorrect.</p> <p>However, the MMO maintains the advice that drill arisings should be included within this section and include a section "(h) the disposal of drill arisings in connection with any foundation drilling up to a total of XX cubic metres", with correct volumes supplied by the Applicant.</p> <p>Deadline 7: No change in position.</p> <p>Deadline 8: No change in position.</p>	<p>Not agreed – no material impact</p>

3.5 Benthic & Intertidal Ecology

Table 5: Agreement Log: Benthic & Intertidal Ecology.

ID	Hornsea Four Position	MMO Position	Position Summary
Environmental Impact Assessment			
MMO-BE-01	Existing and project-specific survey baseline data is sufficient to inform the assessment.	<p>Relevant Representation (RR-020): 3.4.2 The MMO believes that the intertidal survey and subsequent characterisation are appropriate.</p> <p>3.4.3 The Array and export cable corridor have been characterised using a combination of historical data, geophysical data, drop down video ("DDV") (for fauna and sediments at all stations and Annex I stony reef under a separate survey design) and grab (for fauna and sediment composition)... Whilst this is a sensible approach, which has been alluded to in previous consultations, the MMO has major concerns regarding some of the classifications and model outputs following review of the raw data.</p> <p>3.4.13 Although the evidence gathered appears appropriate, the evidence presented is insufficient to allow a decision on the project to be made.</p> <p>3.4.24 The methodology used to obtain and gather the data is appropriate in most cases and standard practices have been used.</p> <p>Deadline 5: The MMO continues to have concerns on this matter. The MMO however, will provide further comments on this at Deadline 6.</p> <p>Deadline 6: The MMO has provided its updated comments on these benthic ecology matters within its Deadline 6 submission. We have no outstanding major comments, only a number of minor comments and actions requested for the final version of the ES chapter, and suggestions regarding monitoring.</p> <p>Deadline 7: The MMO is reviewing the Applicant's updated A2.2 Benthic and Intertidal Ecology and A5.2.1 Benthic and Intertidal Ecology Technical Report submitted at Deadline 7 and will provide a final decision on whether these updates have satisfied the MMO's concerns with a signed statement of common ground at Deadline 8.</p> <p>Deadline 8: The MMO has been informed by the Applicant that both 'A2.2 ES Volume A2 Chapter 2 Benthic and Intertidal Ecology' and 'ES Volume A5 Annex 2.1 Benthic and Intertidal Ecology Technical Report' documents have been updated to capture all of the MMO requested edits at Deadline 7. In the interests of efficient time management the MMO have not checked these amendments. However, if the documents have been updated to capture our comments outlined in section 2.7 of Deadline 6 [REP6-050], then we determine that this matter is agreed and final.</p>	Agreed at Deadline 8

MMO-BE-02	<p>The impact assessment methodologies used for the EIA provide an appropriate approach to assessing potential impacts of Hornsea Four.</p>	<p>Deadline 5: The MMO continues to have concerns on this matter. The MMO however, will provide further comments on this at Deadline 6.</p> <p>Deadline 6: The MMO has provided its updated comments on these benthic ecology matters within it's Deadline 6 submission. We have no outstanding major comments, only a number of minor comments and actions requested for the final version of the ES chapter, and suggestions regarding monitoring.</p> <p>Deadline 8: The MMO has been informed by the Applicant that both 'A2.2 ES Volume A2 Chapter 2 Benthic and Intertidal Ecology' and 'ES Volume A5 Annex 2.1 Benthic and Intertidal Ecology Technical Report' documents have been updated to capture all of the MMO requested edits at Deadline 7. In the interests of efficient time management the MMO have not checked these amendments. However, if the documents have been updated to capture our comments outlined in section 2.7 of Deadline 6 [REP6-050], then we determine that this matter is agreed and final.</p>	<p>Agreed at Deadline 6</p>
MMO-BE-03	<p>The maximum design scenario (MDS) presented in the assessment is appropriate.</p>	<p>Deadline 5: The MMO continues to have concerns on this matter. The MMO however, will provide further comments on this at Deadline 6.</p> <p>Deadline 6: The MMO has provided its updated comments on these benthic ecology matters within it's Deadline 6 submission. We have no outstanding major comments, only a number of minor comments and actions requested for the final version of the ES chapter, and suggestions regarding monitoring.</p> <p>Regarding the MDS, the MMO has one minor action comment as follows: MMO notes the Applicants response in confirming that it is anticipated that the gravel laid during seabed preparations will be retained and is not proposed to be removed. We recognise that the permanent nature of this infrastructure has been acknowledged in paragraph 2.11.2.5 of the ES chapter (A2), however paragraph 2.11.2.11 of the ES chapter (A2) still states that '...the introduction of the Hornsea Four infrastructure and will be long term, lasting for the duration of the development.' We request that the Applicant changes 'long term' to 'permanent' based on the information provided in the response to comments and ensure that this is consistent throughout the chapters.</p> <p>Deadline 7: The MMO is reviewing the Applicant's updated A2.2 Benthic and Intertidal Ecology and A5.2.1 Benthic and Intertidal Ecology Technical Report submitted at Deadline 7 and will provide a final decision on whether these updates have satisfied the MMO's concerns with a signed statement of common ground at Deadline 8.</p> <p>Deadline 8: The MMO has been informed by the Applicant that both 'A2.2 ES Volume A2 Chapter 2 Benthic and Intertidal Ecology' and 'ES Volume A5 Annex 2.1 Benthic and Intertidal Ecology Technical Report' documents have been updated to capture all of the MMO requested edits at Deadline 7. In the interests of efficient time management the MMO have not checked these amendments. However, if the</p>	<p>Agreed at Deadline 6</p>

		documents have been updated to capture our comments outlined in section 2.7 of Deadline 6 [REP6-050], then we determine that this matter is agreed and final.	
MMO-BE-04	The conclusions of the assessment of alone impacts for construction, operation and decommissioning are agreed.	<p>Deadline 5: The MMO continues to have concerns on this matter. The MMO however, will provide further comments on this at Deadline 6.</p> <p>Deadline 6: The MMO has provided its updated comments on these benthic ecology matters within its Deadline 6 submission. We have no outstanding major comments, only a number of minor comments and actions requested for the final version of the ES chapter, and suggestions regarding monitoring.</p> <p>Deadline 7: The MMO is reviewing the Applicant's updated A2.2 Benthic and Intertidal Ecology and A5.2.1 Benthic and Intertidal Ecology Technical Report submitted at Deadline 7 and will provide a final decision on whether these updates have satisfied the MMO's concerns with a signed statement of common ground at Deadline 8.</p> <p>Deadline 8: The MMO has been informed by the Applicant that both 'A2.2 ES Volume A2 Chapter 2 Benthic and Intertidal Ecology' and 'ES Volume A5 Annex 2.1 Benthic and Intertidal Ecology Technical Report' documents have been updated to capture all of the MMO requested edits at Deadline 7. In the interests of efficient time management the MMO have not checked these amendments. However, if the documents have been updated to capture our comments outlined in section 2.7 of Deadline 6 [REP6-050], then we determine that this matter is agreed and final.</p>	Agreed at Deadline 8
MMO-BE-05	The conclusions of the assessment of cumulative impacts are agreed.	<p>Deadline 5: The MMO continues to have concerns on this matter. The MMO however, will provide further comments on this at Deadline 6.</p> <p>Deadline 6: The MMO has provided its updated comments on these benthic ecology matters within its Deadline 6 submission. We have no outstanding major comments, only a number of minor comments and actions requested for the final version of the ES chapter, and suggestions regarding monitoring.</p> <p>Aside from the implications of these matters, the MMO have no remaining concerns on cumulative impacts.</p> <p>Deadline 7: The MMO is reviewing the Applicant's updated F2.7: Outline Marine Monitoring Plan submitted at Deadline 7 and will provide a final decision on whether this satisfies the MMO's outstanding concerns with a signed statement of common ground at Deadline 8.</p> <p>Deadline 8: The MMO has been informed by the Applicant that both 'A2.2 ES Volume A2 Chapter 2 Benthic and Intertidal Ecology' and 'ES Volume A5 Annex 2.1 Benthic and Intertidal Ecology Technical Report' documents have been updated to capture all of the MMO requested edits at Deadline 7. In the interests of efficient time management the MMO have not checked these amendments. However, if the documents have been updated to capture our comments outlined in section 2.7 of Deadline 6 [REP6-050], then we determine that this matter is agreed and final.</p>	Agreed at Deadline 8

<p>MMO-BE-06</p>	<p>Given the impacts of the project, the proposed Commitments outlined in Volume A4, Annex 5.2: Commitments Register are appropriate.</p>	<p>Deadline 5: The MMO continues to have concerns on this matter. The MMO however, will provide further comments on this at Deadline 6.</p> <p>Deadline 6: The MMO has provided its updated comments on these benthic ecology matters within it's Deadline 6 submission. We have no outstanding major comments, only a number of minor comments and actions requested for the final version of the ES chapter, and suggestions regarding monitoring.</p> <p>Regarding the proposed commitment, the MMO provide the following comments: We note the Applicants comments regarding non-native invasive species (NIS), however, Hornsea Four does represent a potential vector and stepping-stone to other offshore infrastructure and the coast. Whilst we recognise the commitment of a marine biosecurity plan to prevent introduction of NIS during construction and maintenance, this will not prevent NIS from colonising Hornsea Four turbines during the operation lifetime. As such, we advise monitoring of NIS is undertaken.</p> <p>The MMO also requests that 10% as a minimum of turbines in the array are monitored for benthic impacts.</p> <p>Deadline 7: The MMO is reviewing the Applicant's updated F2.7: Outline Marine Monitoring Plan submitted at Deadline 7 and will provide a final decision on whether this satisfies the MMO's outstanding concerns with a signed statement of common ground at Deadline 8.</p> <p>Deadline 8: The MMO provides the following updated positions regarding benthic matters in the updated outline marine monitoring plan [REP7-058].</p> <p>The MMO confirms that the monitoring of NIS matter has now been addressed by the updated outline marine monitoring plan [REP7-058].</p> <p>The MMO maintains that section BIE-O-13 of the updated outline marine monitoring plan [REP7-058] should cover the monitoring of a minimum of 10% of the total amount of turbines proposed for construction. If the Applicant is in agreement with this figure, makes this amendment then this matter can be considered agreed and final.</p>	<p>Not agreed – no material impact</p>
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Draft DCO and Deemed Marine Licences

MMO-BE-07	<p>The wording of the following requirements and conditions pertaining to benthic and intertidal ecology are appropriate and adequate:</p> <ul style="list-style-type: none"> • Part 2 - Condition 13(1(a) of DCO Schedules 11 and 12 with reference to a Design Plan; • Part 2 - Condition 13(1(c) of DCO Schedules 11 and 12 with reference to a Construction Method Statement; • Part 2 - Condition 13(1(d) of DCO Schedules 11 and 12 with reference to a Construction Project Environmental Management and Monitoring Plan; • Part 2 - Condition 13(1(e) of DCO Schedules 11 and 12, Part 2 - Condition 13(1(e) with reference to the development of a Scour Protection Management Plan; • Part 2 - Condition 13(1(h) of DCO Schedules 11 and 12 with reference to a Cable Specification and Installation Plan; and • Part 1(6) of DCO Schedules 11 and 12 with reference to a decommissioning plan. 	<p>Deadline 5: The MMO has reviewed the latest DCO and DML in REP4-050, including the wording of these requirements. Please see the MMO's Deadline 5 for our latest comments on the DCO and DMLs.</p> <p>Deadline 6: Regarding the listed commitments in Schedules 11 and 12: Aside from any implication of our comments at Deadline 6, the MMO has no comments with relation to this matter:</p> <p>Part 2 - Condition 13(1(a)- No comments Part 2 - Condition 13(1(c)- No comments Part 2 - Condition 13(1(d)- No comments Part 2 - Condition 13(1(e)- No comments Part 2 - Condition 13(1(h)- No comments</p> <p>Regarding Part 1(6) of the DCO, the MMO has no comments.</p>	<p>Agreed at Deadline 6</p>
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3.6 Fish & Shellfish Ecology

Table 6: Agreement Log: Fish & Shellfish Ecology.

ID	Hornsea Four Position	MMO Position	Position Summary
Environmental Impact Assessment			
MMO-FSE-01	Existing and project-specific survey baseline data is sufficient to inform the assessment.	Relevant Representation (RR-020): 3.6.5 The MMO believes an appropriate characterisation of the environment for fisheries and fish ecology has been presented.	Agreed at Deadline 3
MMO-FSE-02	The impact assessment methodologies used for the EIA provide an appropriate approach to assessing potential impacts of Hornsea Four.	Relevant Representation (RR-020): 3.5.4 The MMO believes that all the potential impacts have been accurately identified. 3.5.10 The MMO is satisfied that the potential cumulative and inter-related impacts and effects on shellfish ecology have been identified and an appropriate assessment has been carried out.	Agreed at Deadline 3
MMO-FSE-03	The maximum design scenario (MDS) presented in the assessment is appropriate.	Relevant Representation (RR-020): 3.6.2 A clear and detailed project description has been presented within Chapter 4. There are a number of elements of the infrastructure that have yet to be determined as the project design is still evolving, however, the options for the various infrastructure appear to have been appropriately considered in the EIA process, for example, maximum design scenarios, depending on the different infrastructure or different construction methods being selected for the project. 3.6.3 The maximum design scenarios for impacts to fish associated with GBS foundations and monopiles have been appropriately considered in the EIA.	Agreed at Deadline 3
MMO-FSE-04	The conclusions of the assessment of alone impacts for construction, operation and decommissioning are agreed.	Relevant Representation (RR-020): 3.6.14 The MMO does not agree with the conclusions reached for herring relating to the impacts of noise and vibration, the impacts of direct damage and disturbance from construction activities, and the impacts of temporary localised increases in SSC and smothering. 1.1.2 The MMO has ongoing concerns in relation to underwater noise and disturbance impacts to fish and marine mammals and so at this stage cannot agree with the seasonal restriction timescale in the current dDCO. Deadline 5a: The MMO notes the applicant's response to our comments regarding the clarification note on Peak Herring Spawning Period and Seasonal Piling Restrictions. We are currently seeking technical advice on the applicant's response and will provide further comments at Deadline 6. Deadline 6: The MMO still does not agree with the conclusions reached for herring. The MMO maintains that the proposed 'peak' spawning period of 1st September – 16th October is not appropriate for the reasons outlined within its Deadline 6 submission. We believe that the calculated 'peak' spawning period is	Not agreed – material impact

ID	Hornsea Four Position	MMO Position	Position Summary
		<p>neither precautionary nor conservative. Further revisions and amendments are needed including the requirement for behavioural response noise modelling and the use of appropriate minimum sea temperatures which influence the duration of egg and larval development, and larval growth rates, all of which are factors which will affect the calculation of a 'peak' spawning period. The MMO maintains the position that the restriction should be between 1st August and 31st October each year. Please see the MMOs Deadline 6 submission for details on this position.</p> <p>Deadline 7: The MMO is reviewing the Applicant's updated G1.10 Clarification Note on Peak Herring Spawning Period and Seasonal Piling Restriction submitted at Deadline 7 and will provide a final decision on whether this satisfies the MMO's outstanding concerns before Deadline 8.</p> <p>Deadline 8: The MMO has reviewed the Applicant's updated G1.10 Clarification Note on Peak Herring Spawning Period and Seasonal Piling Restriction and still does not agree with many of the conclusions reached for herring or the reasons outlined within its Deadline 8 submission. However, the MMO is satisfied with the proposed restriction wording comprising of: "No piling of any kind is permitted from 1st August to 23rd October (inclusive) in any year." The MMO caveats that we have adopted a number of assumptions outlined in the Deadline 8 submission to come to this position, that we leave to the Examiners discretion. The MMO have clarified some further points of disagreement regarding sandeel within 1.4.2 of the Deadline 8 submission.</p>	
MMO-FSE-05	The conclusions of the assessment of cumulative impacts are agreed.	<p>Relevant Representation (RR-020): 3.6.11 The MMO is currently unable to agree with the conclusions reached on cumulative impacts of noise on fish. This is primarily due to the lack of appropriate modelling to assess the extent of behavioural effects of piling on fish, and because the mitigation currently proposed (a temporal piling restriction for the HVAC booster station) is not considered adequate mitigation to protect spawning herring and their eggs and larvae. Please see detailed comments in sections 3.7.21 to 3.7.24 regarding modelling of behavioural effects and sections 3.7.25 to 3.7.25 regarding the timing of the Banks herring spawning season.</p> <p>Deadline 5a: The MMO notes the Applicant's response to our comments regarding the clarification note on Peak Herring Spawning Period and Seasonal Piling Restrictions. We are currently seeking technical advice on the applicant's response and will provide further comments at Deadline 6</p> <p>Deadline 6: The MMO is still unable to agree with the cumulative impacts of noise on fish for the reasons outlined within its Deadline 6 submission. We maintain that the proposed 'peak' spawning period of 1st September – 16th October is not appropriate We believe that the calculated 'peak' spawning period is neither precautionary nor conservative. Further revisions and amendments are needed including the requirement for behavioural response noise modelling and the use of appropriate minimum sea</p>	Not agreed – material impact

ID	Hornsea Four Position	MMO Position	Position Summary
		<p>temperatures which influence the duration of egg and larval development, and larval growth rates, all of which are factors which will affect the calculation of a 'peak' spawning period. The MMO maintains the position that the restriction should be between 1st August and 31st October each year.</p> <p>Please see the MMOs Deadline 6 submission for details on this position.</p> <p>Deadline 7: The MMO is reviewing the Applicant's updated G1.10 Clarification Note on Peak Herring Spawning Period and Seasonal Piling Restriction submitted at Deadline 7 and will provide a final decision on whether this satisfies the MMO's outstanding concerns before Deadline 8.</p> <p>Deadline 8: The MMO has reviewed the Applicant's updated G1.10 Clarification Note on Peak Herring Spawning Period and Seasonal Piling Restriction and still does not agree with some of the conclusions reached for herring or the reasons outlined within its Deadline 8 submission. However, the MMO is satisfied with the proposed restriction wording comprising of: "No piling of any kind is permitted from 1st August to 23rd October (inclusive) in any year." The MMO caveats that we have adopted a number of assumptions outlined in the Deadline 8 submission to come to this position, that we leave to the Examiners discretion. The MMO have clarified some further points of disagreement regarding sandeel within 1.4.2 of the Deadline 8 submission.</p>	
MMO-FSE-06	<p>Given the impacts of the project, the proposed Commitments outlined in Volume A4, Annex 5.2: Commitments Register are appropriate.</p>	<p>Relevant Representation (RR-020): 3.5.11 Mitigation measures "beyond existing commitments" are not given for shellfish receptors. The MMO is content with this, given the scale of proposed works versus the area of shellfish grounds, however, the MMO would urge closer liaison with HFIG to determine exact locations of shell fishing activity.</p> <p>Deadline 8: The MMO has reviewed the Outline Marine Monitoring Plan which the Applicant provided us at Deadline 7 [REP7-058] and has provided comments at Deadline 8 regarding fish monitoring.</p> <p>The MMO recognises that this is an outline plan and therefore assume that the specific details of monitoring plan could be refined post-consent. Therefore, the following comments have been made to highlight previous comments raised by the MMO in relation to the specific areas of the project site which require monitoring for sandeel and herring.</p> <p>Sandeel: The MMO recommends that pre- and post-construction monitoring of sandeel habitat suitability should include the array and adjacent area (i.e. in addition to the export cable corridor and adjacent areas. Please refer to our comments in section 1.5.2 of this submission for further details.</p> <p>Herring: The MMO support the proposal for pre- and post-construction monitoring herring spawning habitat for the Hornsea Four Project. There is scope for this monitoring to be targeted to those areas of the ECC where herring spawning occurs and where seabed sediments are shown to comprise of coarse sand and gravel, i.e. are suitable substrates for herring to lay their eggs on. Please refer to our advice in</p>	<p>Not agreed – material impact [previously agreed at Deadline 3]</p>

ID	Hornsea Four Position	MMO Position	Position Summary
		sections 3.15 - 3.28 of the MMO's Deadline 7 [REP7-111] for our detailed comments on herring spawning within the nearshore section of the ECC and reiterates our concerns regarding potential impacts to herring and herring spawning substrate during construction and disposal activities.	

<p>MMO-FSE-07</p>	<p>The wording of the following requirements and conditions pertaining to fish and shellfish ecology are appropriate and adequate:</p> <ul style="list-style-type: none"> • Part 2 - Condition 13(1)(a) of DCO Schedules 11 and 12 with reference to a Design Plan; • Part 2 - Condition 13(1)(c) of DCO Schedules 11 and 12 with reference to a Construction Method Statement; • Part 2 - Condition 13(1)(d) of DCO Schedules 11 and 12 with reference to a Construction Project Environmental Management and Monitoring Plan; • Part 2 - Condition 13(1)(e) of DCO Schedules 11 and 12, Part 2 - Condition 13(1)(e) with reference to the development of a Scour Protection Management Plan; • Part 2 - Condition 13(1)(g) of DCO Schedules 11 and 12 with reference to a Marine Mammal Mitigation Protocol • Part 2 - Condition 13(1)(h) of DCO Schedules 11 and 12 with reference to a Cable Specification and Installation Plan; and 	<p>Deadline 5 (REP5-107): The MMO provided comments on the DCO and DMLs. In response to the MMO's comments in REP5-107, the Applicant provided the following responses in REP5a-014:</p> <ul style="list-style-type: none"> • Condition 13(1)(a) was updated in line with the MMO's comments in REP5-107. • In relation to Condition 13(1)(h)(ii) - The Applicant continues to consider the term 'Chart Datum' to be a widely used and commonly understood term and that no changes are therefore necessary. • DMLs Schedule 12, Part 1, Article 6 in relation to a decommissioning plan – the Applicant has added the MMO's text to the draft DCO provided at deadline 5a. • The MMO has provided no comments on the other conditions listed in statement MMO-FSE-07. <p>Deadline 6: Regarding the listed commitments in Schedules 11 and 12: Aside from any implication of our comments at Deadline 6, the MMO has no comments with relation to this matter:</p> <ul style="list-style-type: none"> • Part 2 - Condition 13(1)(a)- No comments • Part 2 - Condition 13(1)(c)- No comments • Part 2 - Condition 13(1)(d)- No comments • Part 2 - Condition 13(1)(e)- No comments • Part 2 - Condition 13(1)(h)- No comments <p>Regarding Part 1(6) of the DCO, the MMO has no comments.</p>	<p>Agreed at Deadline 6</p>
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ID	Hornsea Four Position	MMO Position	Position Summary
	<ul style="list-style-type: none"> Part 1(6) of DCO Schedules 11 and 12 with reference to a decommissioning plan. 		
MMO-FSE-08	<p>The wording of the following requirements and conditions pertaining to fish and shellfish ecology are appropriate and adequate:</p> <ul style="list-style-type: none"> Part 2 - Condition 18(2)(b) of DCO Schedules 11 and 12 with reference to construction noise monitoring is appropriate. 	<p>Deadline 5 (REP5-107): The MMO provided comments on the DCO and DMLs.</p> <p>Deadline 5a: The Applicant updated condition 18(3) of Schedules 11 and 12 to substantively align with the MMO's request with some minor amendments to:</p> <ol style="list-style-type: none"> Allow the MMO to agree to an alternative period for submission of the noise measurement results; Refer to impacts in excess to those assessed, to clarify the purpose of the condition; Clarify that the mitigation measures are those specified in the marine mammal mitigation protocol. <p>Deadline 6: The MMO notes the Applicant's reasoning for the amendments made to the MMO's suggested wording and is content with the wording of this condition at this stage. The MMO has provided comments on the Outline Marine Mammal Mitigation Protocol (MMMP) at Deadline 6.</p>	Agreed at Deadline 6
MMO-FSE-09	<p>The wording of the following requirements and conditions pertaining to fish and shellfish ecology are appropriate and adequate:</p> <ul style="list-style-type: none"> Condition 23 of DCO Schedule 12 with reference to a piling restriction between 1st September and 16th October is appropriate. 	<p>Relevant Representation (RR-020): 3.7.33 In principal, the MMO supports the proposed piling restriction as a form of mitigation to protect spawning herring and their eggs and larvae from the impacts of noise and vibration.</p> <p>3.7.34 However, the MMO does not agree with the proposed dates of the restriction (1st September and 16th October). The MMO requests the restriction should be between 1st August and 31st October.</p> <p>Deadline 5: The MMO maintains its position from RR-020 that the restriction should be between 1st August and 31st October.</p> <p>Deadline 5a: The MMO notes the applicant's response to our comments regarding the clarification note on Peak Herring Spawning Period and Seasonal Piling Restrictions. We are currently seeking technical advice on the applicant's response and will provide further comments at Deadline 6.</p> <p>Deadline 6: The MMO maintains its position that the restriction should be between 1st August and 31st October. Please see the MMO Deadline 6 submission for further details on this position, and for its comments on the clarification note on Peak Herring Spawning Period and Seasonal Piling Restrictions.</p> <p>Deadline 7: The MMO is reviewing the Applicant's updated G1.10 Clarification Note on Peak Herring Spawning Period and Seasonal Piling Restriction submitted at Deadline 7 and will provide a final decision on whether this satisfies the MMO's outstanding concerns before Deadline 8.</p> <p>Deadline 8: The MMO has reviewed the Applicant's updated G1.10 Clarification Note on Peak Herring Spawning Period and Seasonal Piling Restriction and still does not agree with some of the conclusions reached for herring or the reasons outlined within its Deadline 8 submission. However, the MMO is satisfied with the proposed restriction wording comprising of: "No piling of any kind is permitted from 1st August to</p>	Not agreed – material impact

ID	Hornsea Four Position	MMO Position	Position Summary
		23rd October (inclusive) in any year." The MMO caveats that we have adopted a number of assumptions outlined in the Deadline 8 submission to come to this position, that we leave to the Examiners discretion.	

3.7 Marine Mammals/Underwater Noise

Table 7: Agreement Log: Marine Mammals/Underwater Noise.

ID	Hornsea Four Position	MMO Position	Position Summary
Environmental Impact Assessment			
MMO-MM-01	Existing and project-specific survey baseline data is sufficient to inform the assessment.	Relevant Representation (RR-020): 3.7.2 The MMO defers to Natural England on if the existing environment (baseline) has been characterised appropriately. Deadline 5: The MMO continues to defer to Natural England on this matter. Deadline 6: The MMO has no comments on this matter.	Not applicable
MMO-MM-02	The impact assessment methodologies used for the EIA provide an appropriate approach to assessing potential impacts of Hornsea Four.	Relevant Representation (RR-020): 3.7.9 The Subsea Noise Report is informative and provides relevant details on the modelling methodology and parameters input into the model. Reference is made to appropriate noise exposure criteria for marine mammals and fish species. The worst-case scenario (i.e. maximum hammer energy) has been assessed for monopiles and pin piles alongside the most likely scenario. The modelling also considers both a stationary and fleeing receptor for fish (primarily fleeing for marine mammals).	Agreed at Deadline 3
MMO-MM-03	The maximum design scenario (MDS) presented in the assessment is appropriate.	Deadline 5: The MMO is reviewing the Clarification Note on Marine Mammals - Revision: 01 [REP4-045] and will provide it's comments at Deadline 6, where applicable the MMO will provide these comments to the Applicant ahead of Deadline 6. Deadline 6: Please see the MMO's Deadline 6 for comments regarding the Clarification Note on Marine Mammals, however, we note this does not relate to MDS. We have no comments to make on the MDS presented for this matter.	Agreed at Deadline 6
MMO-MM-04	The conclusions of the assessment of alone impacts for construction, operation and decommissioning are agreed.	Relevant Representation (RR-020): 1.1.2 The MMO has ongoing concerns in relation to underwater noise and disturbance impacts to fish and marine mammals and so at this stage cannot agree with the seasonal restriction timescale in the current dDCO. Deadline 5: The MMO maintains its position from RR-020 that the restriction should be between 1 st August and 31 st October.	Not agreed – material impact

ID	Hornsea Four Position	MMO Position	Position Summary
		<p>Deadline 6: The MMO maintains that the restriction should be between 1st August and 31st October. Please see the MMO's Deadline 6 submission for further details on this matter.</p> <p>Deadline 7: The MMO is reviewing the Applicant's updated G1.10 Clarification Note on Peak Herring Spawning Period and Seasonal Piling Restriction submitted at Deadline 7 and will provide a final decision on whether this satisfies the MMO's outstanding concerns before Deadline 8.</p> <p>Deadline 8: The MMO is satisfied with the proposed restriction wording comprising of: "No piling of any kind is permitted from 1st August to 23rd October (inclusive) in any year." The MMO caveats that we have adopted a number of assumptions outlined in the Deadline 8 submission to come to this position, that we leave to the Examiners discretion.</p> <p>The MMO have clarified some further points of disagreement regarding underwater noise within the Deadline 8 submission as follows:</p> <p>Linking to comments 3.7.11 of RR-020: Regarding the calculation of the underwater noise transmission loss (TL) for the non - impulsive sources, specifically for vessel noise (12 log R - 0.0021 R). We acknowledge that the approach undertaken by Subacoustech is conservative (and on that basis we are not overly concerned). We also agree that the noise from these 'other sources' will likely have fallen below any level of concern at long ranges. However, further clarity or explanation on this (somewhat unusual) simple modelling approach (and TL formula) is lacking, especially as the propagation loss becomes negative beyond 25 km.</p>	
MMO-MM-05	The conclusions of the assessment of cumulative impacts are agreed.	<p>Deadline 5: The MMO is reviewing the Clarification Note on Marine Mammals - Revision: 01 [REP4-045] and will provide its comments at Deadline 6, where applicable the MMO will provide these comments to the Applicant ahead of Deadline 6.</p> <p>Deadline 6: The MMO has provided comments on the Clarification Note on Marine Mammals - Revision: 01 [REP4-045] in the Deadline 6 submission. In summary, the MMO maintains the position that although there are uncertainties and some conservatism with estimating the weighted cumulative sound exposure, the requirement to implement mitigation based on the SELcum should remain, and the (dual) noise exposure criteria should be appropriately considered and applied.</p> <p>Deadline 7: The MMO has reviewed the updated F2.5 Outline Marine Mammal Mitigation Protocol (REP6-011) (Outline MMMP) from Deadline 6 and confirms that the Outline MMMP has been appropriately updated/revised accordingly to make clear that the final MMMP will consider mitigation for both instantaneous and cumulative PTS (i.e. "The final MMMP will include mitigation of cumulative PTS impact ranges that will be modelled based on the latest research and methods available at the time of the final MMMP post-consent" (paragraph 4.2.1.3)). The MMO agrees that noise modelling should be informed using</p>	Agreed at Deadline 7

ID	Hornsea Four Position	MMO Position	Position Summary
		<p>the best available, peer-reviewed scientific guidance at the time. The MMO outline that it would be helpful if the Applicant could clarify the following point:</p> <ul style="list-style-type: none"> Table 1 of the Outline MMMP states that <i>"there will only be a maximum installation of 2 piled foundations within a 24-hour period. It is possible for installation of the two piled foundations to occur concurrently i.e., within a 24-hour period at up to two locations within the HVAC search area or up to two locations within the array. The two piled foundation locations may also be piled simultaneously"</i>. The MMO advises that this statement is confusing as 'concurrently' and 'simultaneously' have the same meaning. Presumably, the Applicant means that consecutive piling is likely (i.e. up to two piles installed in a 24-hour period, one after the other) but simultaneous piling may also occur (two piles installed in different locations at the same time within either the HVAC area or within the array). However, we ask that the Applicant could please clarify this. 	
MMO-MM-06	<p>Given the impacts of the project, the proposed Commitments outlined in Volume A4, Annex 5.2: Commitments Register are appropriate.</p>	<p>Deadline 5: The MMO is reviewing the Clarification Note on Marine Mammals - Revision: 01 [REP4-045] and will provide its comments at Deadline 6, where applicable the MMO will provide these comments to the Applicant ahead of Deadline 6. The MMO's latest comments on the commitments, in the form of DML conditions and outline documents can be found in the submitted Deadline 5 response.</p> <p>Deadline 6: The MMO has provided comments on the Outline Marine Mammal Mitigation Protocol (MMMP) at Deadline 6.</p> <p>Deadline 8: The MMO has reviewed the Outline Marine Monitoring Plan which the Applicant provided us at Deadline 7 [REP7-058] and remains satisfied that commitments are appropriate. We do note the following advisories: The only other monitoring not captured within this outline marine monitoring plan is whether Passive Acoustic Monitoring (PAM) is undertaken as part of the MMMP. PAM can provide a useful supplement to visual observations undertaken by Marine Mammal Observers. The MMO also highlights that the construction noise monitoring can also be used to validate the predictions made in the Environmental Statement with regard to fish ecology.</p>	Agreed at Deadline 6
Draft DCO and Deemed Marine Licences			
MMO-MM-07	<p>The wording of the following requirements and conditions pertaining to marine mammals are appropriate and adequate:</p> <ul style="list-style-type: none"> Part 2 - Condition 13(1)(c) of DCO Schedules 11 and 12 with 	<p>Deadline 5: The MMO has reviewed the latest DCO and DML in REP4-050, including the wording of these requirements. Please see the MMO's Deadline 5 for our latest comments on the DCO and DMLs.</p>	Agreed at Deadline 6

ID	Hornsea Four Position	MMO Position	Position Summary
	<p>reference to a Construction Method Statement;</p> <ul style="list-style-type: none"> Part 2 - Condition 13(1)(d) of DCO Schedules 11 and 12 with reference to a Construction Project Environmental Management and Monitoring Plan; Part 2 - Condition 13(1)(d)(v) of DCO Schedules 11 and 12 with reference to a Vessel Management Plan; and Part 1(6) of DCO Schedules 11 and 12 with reference to a decommissioning plan. 	<p>In response to the MMO's comments in REP5-107, the Applicant provided the following responses in REP5a-014:</p> <p>DMLs Schedule 12, Part 1, Article 6 in relation to a decommissioning plan – the Applicant has added the MMO's text to the draft DCO provided at deadline 5a.</p> <p>The MMO has provided no comments on the other conditions listed in statement MMO-MM-07.</p> <p>Deadline 6: Regarding the listed commitments in Schedules 11 and 12: Aside from any implication of our comments at Deadline 6, the MMO confirms it has no comments with relation to this matter:</p> <p>Part 2 - Condition 13(1)(c)- No comments Part 2 - Condition 13(1)(d)- No comments Part 2 - Condition 13(1)(d)(v)</p> <p>Regarding Part 1(6) of the DCO, the MMO has no comments.</p>	
MMO-MM-08	<p>The wording of the following requirements and conditions pertaining to marine mammals are appropriate and adequate:</p> <ul style="list-style-type: none"> Part 2 - Condition 13(j) of DCO Schedules 11 and 12 with reference to a site integrity plan is appropriate. 	<p>Deadline 5: The MMO strongly advises that the "Outline Southern North Sea Special Area of Conservation Site Integrity Plan" (SIP) has its own standalone condition. We request the following wording for the new SIP condition: "Southern North Sea Special Area of Conservation Site Integrity Plan 25- (1) No piling activities can take place until a Site Integrity Plan (SIP), which accords with the principles set out in the in principle XX Project Southern North Sea SAC Site Integrity Plan, has been submitted to, and approved in writing, by the MMO in consultation with the relevant statutory nature conservation body. (2) The SIP submitted for approval must contain a description of the conservation objectives for the Southern North Sea Special Area of Conservation (SNS SAC) as well as any relevant management measures and it must set out the key statutory nature conservation body advice on activities within the SNS SAC relating to piling as set out within the JNCC Guidance and how this has been considered in the context of the authorised scheme. (3) The SIP must be submitted to the MMO no later than six months prior to the commencement of the piling activities. (4) In approving the SIP the MMO must be satisfied that the authorised scheme at the pre-construction stage, in-combination with other plans and projects, is in line with the JNCC Guidance. (5) The approved SIP may be amended with the prior written approval of the MMO, in consultation with the relevant statutory nature conservation body, where the MMO remains satisfied that the Project, in-combination with other plans or projects at the pre-construction stage, is in line with the JNCC Guidance."</p>	Not agreed – material impact

ID	Hornsea Four Position	MMO Position	Position Summary
		<p>This is to ensure it is in line with the MMO's latest measures to enable efficient management of SIPs. The MMO defers to Natural England as to what should be included within the Outline SIP document.</p> <p>The MMO highlights that if consented, the MMO would require further information within the SIP document to include in-combination management measures. This would include any potential additional requirements the MMO believes are necessary to enable the guidance to be followed and could include additional reporting requirement.</p> <p>Deadline 6: The MMO maintains its position set out at Deadline 5, that a standalone SIP condition would be preferable. This is to ensure it is in line with the MMO's latest measures to enable efficient management of underwater noise from projects within the Southern North Sea SAC..</p> <p>Deadline 7: No change in position.</p> <p>Deadline 8: The MMO maintains the position from Deadline 6 regarding the condition for the SIP. The MMO has provided comments on the contents of the SIP at Deadline 8 detailing that we are satisfied with the contents aside from one minor clarification point.</p>	
MMO-MM-09	<p>The wording of the following requirements and conditions pertaining to marine mammals are appropriate and adequate:</p> <ul style="list-style-type: none"> Part 2 - Condition 13(1)(g) of DCO Schedules 11 and 12 with reference to a Marine Mammal Mitigation Protocol is appropriate. 	<p>Deadline 5a: The MMO are currently seeking technical advice on this matter, and so shall provide a response at Deadline 6.</p> <p>Deadline 6: The MMO has provided comments on the Outline Marine Mammal Mitigation Protocol (MMMP) at Deadline 6.</p> <p>Deadline 7: The MMO is satisfied with the requirement specified in relation to the Marine Mammal Mitigation Protocol.</p>	Agreed at Deadline 7
MMO-MM-10	<p>The wording of the following requirements and conditions pertaining to marine mammals are appropriate and adequate:</p> <ul style="list-style-type: none"> Part 2 - Condition 18(2)(b) of DCO Schedules 11 and 12 with reference to construction noise monitoring is appropriate. 	<p>Deadline 5: The MMO has reviewed the latest DCO and DML in REP4-050, including the wording of these requirements. Please see the MMO's Deadline 5 for our latest comments on the DCO and DMLs.</p> <p>Deadline 5a: The Applicant updated condition 18(3) of Schedules 11 and 12 to substantively align with the MMO's request with some minor amendments: to:</p> <ol style="list-style-type: none"> Allow the MMO to agree to an alternative period for submission of the noise measurement results; Refer to impacts in excess to those assessed, to clarify the purpose of the condition; Clarify that the mitigation measures are those specified in the marine mammal mitigation protocol. <p>Deadline 6: The MMO notes the Applicant's reasoning for the amendments made to the MMO's suggested wording and is content with the wording of this condition at this stage. The MMO has provided comments on the Outline Marine Mammal Mitigation Protocol (MMMP) at Deadline 6.</p>	Agreed at Deadline 6

3.8 Outline Plan Documents

Table 8: Agreement Log: Outline Plan Documents.

ID	Hornsea Four Position	MMO Position	Position Summary
MMO-OP-01	The Outline Marine Mammal Mitigation Protocol is appropriate and adequate.	<p>Relevant Representation (RR-020): 4.3.1 The ES is appropriately supported by an Outline MMMP, the aim of which is to reduce to negligible the risk of PTS for marine mammal species in relation to pile driving for the installation of the Project’s foundation structures.</p> <p>4.3.4 The MMO disagrees with the approach [focusing on mitigating only the “instantaneous” SPLpeak PTS-onset impact ranges]. The MMMP should focus on mitigating both the predicted SPLpeak and SELcum impact ranges.</p> <p>4.3.6 The MMO would expect the commitment to providing at source reduction measures to be included within the Commitment Register but was unable to find this mentioned specifically. The MMO requests that this is updated to reflect this commitment and that this is captured within the DML.</p> <p>4.4.3 The MMO notes that despite the arguments put forward by the Project, it does appear that they are committed to reducing the risk of cumulative PTS and this will be appropriately considered within the MMMP. As above the MMO welcomes this.</p> <p>Deadline 5: The MMO has reviewed the latest DCO and DML in REP4-050, including the wording of these requirements. Please see the MMO’s Deadline 5 for our latest comments on the DCO and DMLs. However, the MMO notes that it is currently reviewing both the Clarification Note on Marine Mammals - Revision: 01[REP4-045] and a re-review of the outline marine mammal mitigation Protocol [APP-240] in light of the updates, and will aim to provide comments at Deadline 6.</p> <p>Deadline 5a: The MMO are currently seeking technical advice on this matter, and so shall provide a response at Deadline 6.</p> <p>Deadline 6: The MMO has provided comments on the Outline Marine Mammal Mitigation Protocol (MMMP) at Deadline 6.</p> <p>Deadline 7: The MMO has reviewed the updated F2.5 Outline Marine Mammal Mitigation Protocol (REP6-011) from Deadline 6 and is satisfied. The MMO have outlined one minor clarification point at Deadline 7 as follows:</p> <ul style="list-style-type: none"> • Table 1 of the Outline MMMP states that <i>“there will only be a maximum installation of 2 piled foundations within a 24-hour period. It is possible for installation of the two piled foundations to occur concurrently i.e., within a 24-hour period at up to two locations within the HVAC search area or up to two locations within the array. The two piled foundation locations may also be piled simultaneously”</i>. 	Agreed

		<p>The MMO advises that this statement is confusing as 'concurrently' and 'simultaneously' have the same meaning. Presumably, the Applicant means that consecutive piling is likely (i.e. up to two piles installed in a 24-hour period, one after the other) but simultaneous piling may also occur (two piles installed in different locations at the same time within either the HVAC area or within the array). However, we ask that the Applicant could please clarify this.</p>	
MMO-OP-02	<p>The Outline Southern North Sea Special Area of Conservation Site Integrity Plan is appropriate and adequate.</p>	<p>Deadline 5: The MMO strongly advises that the "Outline Southern North Sea Special Area of Conservation Site Integrity Plan" (SIP) has its own standalone condition. We request the following wording for the new SIP condition: "Southern North Sea Special Area of Conservation Site Integrity Plan 25- (1) No piling activities can take place until a Site Integrity Plan (SIP), which accords with the principles set out in the in principle XX Project Southern North Sea SAC Site Integrity Plan, has been submitted to, and approved in writing, by the MMO in consultation with the relevant statutory nature conservation body. (2) The SIP submitted for approval must contain a description of the conservation objectives for the Southern North Sea Special Area of Conservation (SNS SAC) as well as any relevant management measures and it must set out the key statutory nature conservation body advice on activities within the SNS SAC relating to piling as set out within the JNCC Guidance and how this has been considered in the context of the authorised scheme. (3) The SIP must be submitted to the MMO no later than six months prior to the commencement of the piling activities. (4) In approving the SIP the MMO must be satisfied that the authorised scheme at the pre-construction stage, in-combination with other plans and projects, is in line with the JNCC Guidance. (5) The approved SIP may be amended with the prior written approval of the MMO, in consultation with the relevant statutory nature conservation body, where the MMO remains satisfied that the Project, in-combination with other plans or projects at the pre-construction stage, is in line with the JNCC Guidance." This is to ensure it is in line with the MMO's latest measures to enable efficient management of SIPs. The MMO defers to Natural England as to what should be included within the Outline SIP document. The MMO highlights that if consented, the MMO would require further information within the SIP document to include in-combination management measures. This would include any potential additional requirements the MMO believes are necessary to enable the guidance to be followed and could include additional reporting requirement.</p> <p>Deadline 6: The MMO maintains its position set out at Deadline 5, that a standalone SIP condition would be preferable. This is to ensure it is in line with the MMO's latest measures to enable efficient management of underwater noise from projects within the Southern North Sea SAC. Please see Deadline 6 for further details on the SIP.</p> <p>Deadline 7: No change in position.</p>	<p>Not agreed</p>

		<p>Deadline 8: The MMO maintains the position from Deadline 6 regarding the condition for the SIP. The MMO has provided comments on the contents of the SIP at Deadline 8 detailing that we are satisfied with the contents aside from one minor clarification point.</p>	
MMO-OP-03	<p>The Dredging and Disposal Site Characterisation is appropriate and adequate.</p>	<p>Relevant Representation (RR-020): 3.3.2 The environment surrounding the proposed dredge area has been thoroughly characterised in terms of both physical and chemical composition, based on a sampling regime conducted in 2019, which is appropriate.</p> <p>3.3.8 The ES concludes that potential impacts related to dredging and disposal operations are negligible. The MMO agrees with this conclusion, based on the information provided.</p> <p>3.3.11 However, comments are still outstanding regarding the inclusion of details relating to the sampling and analysis of marine sediment from within the proposed dredge area.</p> <p>Deadline 5: Of the concerns raised at the previous stage, the Applicant has not resolved the concern relating to sample location depths and not resolved the concern relating to contracted laboratories. Both outstanding concerns should be resolved, however, the latter concern is more critical to the application. The MMO recommend that the MMO Results Template (document referenced in para 4b) is updated to reflect the actual laboratories which conducted the analyses, and that written clarification is provided to the MMO to resolve the discrepancies present. The data are not considered adequate to support the application until this is resolved.</p> <p>The MMO advises [REP4-052] that sampling is required either every three years, or every five, depending on the results of the sediment sample analysis. The MMO requests clarity on how OSPAR requirements would be adhered to, and how this would be secured, should there be a delay in construction. The MMO suggests that the OSPAR sampling requirements are clearly outlined as a matter to be signed off in the DMLs.</p> <p>Deadline 6: The MMO has reviewed the Applicant’s position on ongoing monitoring of sediment samples put forward at Deadline 5a and has provided comments in the Deadline 6 submission as follows:</p> <p>The MMO confirms that we are referring to the OSPAR Guidelines for the Management of Dredged Material in our comments referencing OSPAR.</p> <p>The laboratories used by the Applicant for Particle Size Analysis (PSA) are not MMO validated, and as such we are yet to be able to review the analysis and provide advise as to whether the frequency of sampling for sediment will need to be every 3 years or every 5. As such our advice on an explicit condition to address sampling remains.</p> <p>The MMO will consider the Applicant’s suggestion regarding the approval of this matter being contained within the construction project environmental management and monitoring plan, however, we caveat if this route is pursued, it would need to be clearly outlined within this plan. The MMO also notes Condition 30 within the East Anglia 2 DML’s (Schedule 13 and 14) where sampling requirements have been specifically outlined.</p>	<p>Not agreed – no material impact</p>

		<p>Regarding the PSA analysis:</p> <p>The Applicant has confirmed via an email of 22 July 2022 that Gardline Environmental Ltd. subcontracted the PSA analysis to Thomson Ecology. Neither Gardline Environmental Ltd, nor Thomson Ecology are validated by the MMO for PSA analysis.</p> <p>The MMO notes the Applicant's email of 22 July to the MMO in which they advised: <i>"The MMO provided detailed comments on the benthic and intertidal ecology elements of the PEIR, including specific comments related to the array area PSA, with no comments flagging this issue with PSA contractor validations. The Applicant considers that this mandate for all PSA laboratories to be validated by the MMO should have been raised at that time rather than being flagged at this late stage in the Examination process."</i> The MMO confirms we would not standardly check the details of the laboratories used within the context of benthic and intertidal ecology during the PEIR stage. This is due to the fact that lab validation for PSA and contamination levels is required for disposal sediment analysis. These matters further relate to distinct benthic and intertidal ecology specialists, who would not comment on the validity of laboratories for sediment contaminants. As laboratory validation was not queried by the Applicant during the PIER stage, and the data was not presented using the MMO template until later in the Examination, the information was not presented in a way that validation would be checked until this later stage.</p> <p>Please see the guidance at https://www.gov.uk/guidance/marine-licensing-sediment-analysis-and-sample-plans#laboratory-validation for further information on laboratory validation and the requirements for sediment sample analysis.</p> <p>The MMO will consider its ability to review the sample analysis, without a validated laboratory for PSA, but would regardless be unable to provide a complete response regarding sediment contaminants without confirmation of the use of valid laboratories.</p> <p>It should be noted that the validation process is a long process and even if an application was submitted to the MMO for validation, it will not be completed before the examination for Hornsea 4 has closed.</p> <p>Deadline 7: The MMO has reviewed the updated Dredging and Disposal Site Characterisation report submitted at Deadline 6 [REP6-004] and provided its comments at Deadline 7.</p> <p>The MMO is further reviewing the Applicant's sample analysis as submitted at DCO application and will provide an update regarding the analysis into Examination at Deadline 7. However, the MMO expects a DCO requirement for the Applicant to submit updated sediment sampling (proving analysis undertaken from an MMO approved laboratory) for approval by the MMO prior to construction commencing.</p> <p>Deadline 8: No change from comments submitted within the Deadline 7 submission [REP7-111].</p>	
MMO-OP-04	The Outline Marine Monitoring Plan is appropriate and adequate.	Deadline 5: The MMO notes monitoring is still a subject under discussion relating to a number of subject areas, and that this plan may need to be updated to reflect the final outcome of those discussions.	Not agreed – no material impact

		<p>Deadline 6: The MMO notes monitoring is still a subject under discussion relating to a number of subject areas, and that this plan may need to be updated to reflect the final outcome of those discussions.</p> <p>Deadline 7: The MMO is reviewing the Applicant's updated F2.7: Outline Marine Monitoring Plan submitted at Deadline 7 and will provide a final decision on whether this satisfies the MMO's outstanding concerns with a signed statement of common ground at Deadline 8.</p> <p>Deadline 8: The MMO provides the following updated positions on the updated outline marine monitoring plan [REP7-058].</p> <ul style="list-style-type: none"> •The MMO confirms that the monitoring of NIS matter has now been addressed by the updated outline marine monitoring plan [REP7-058]. •The MMO maintains that section BIE-O-13 of the updated outline marine monitoring plan [REP7-058] should cover the monitoring of a minimum of 10% of the total amount of turbines proposed for construction. •The MMO are content that the Smithic bank monitoring put forward the updated outline marine monitoring plan [REP7-058] is appropriate. we provide some remaining minor comments within the Deadline 8 submission. •The MMO are content that the Flamborough Front monitoring put forward the updated outline marine monitoring plan [REP7-058] is appropriate. We provide some remaining minor comments within the Deadline 8 submission. 	
MMO-OP-05	The Outline Fisheries Coexistence and Liaison Plan is appropriate and adequate.	<p>Relevant Representation (RR-020): 4.6.1 The MMO notes the Outline Fisheries Liaison and Coexistence Plan will be developed further at the post consent stage, however, the MMO believes the Applicant can provide further detail at this stage.</p> <p>Deadline 5: The MMO strongly maintains its position that it is made clear within the document that "<i>the MMO will not act as arbitrator and will not be involved in discussions on the need for, or amount of, compensation being issued</i>". The MMO believes this should be made clear at this stage to ensure all parties are aware that the MMO will not be part of this process. We note that the Applicant has outlined that they do not intend on updating this. This is a point of disagreement.</p> <p>Deadline 7: No change in position.</p> <p>Deadline 8: The MMO maintains this position. As a regulator we should not be a facilitator of commercial agreements between two affected parties.</p>	Not agreed – no material impact